

May
2009

NEWS FROM CVARC

President's Message Greg Lane, K7SDW

Just two more months before Field Day! I hope you signed up with Rob, W6RH, for an assignment as this year not only will be different but should be both entertaining and educational. The FD committee needs your help and support.

Our club would like to take this opportunity to thank the Westlake Rotary Club for their donation to our club. As a non-profit club we are able to accept from other organizations and companies donations to supplement our expenses throughout the year. With increased costs in postage and the various projects that our Board attempts to outline and serve both you and the community it takes some effort on your part to find out if your company as a "grant" or "gifting" program. It usually means what time and service you put into our club to qualify. I encourage you to check with your company's public relations personnel to see if you can qualify for submitting an application. Check back with me if you have any questions.

73 de Greg, K7SDW

Inside this issue

2008 Event Calendar	2
Brining Items to the Club Meeting.....	2
Electronic Expeditors	2
Dinner with the Club Speaker	2
Next Month's Speaker	2
2008 UHF QSO Party Winner.....	2
Did you miss the DX convention?.....	3
Triple, Dual or Single Conversion.....	4

May Club Meeting

"A Quick Trip through the Bright and Dark Universe"

The presentation will range over 40 magnitudes of distance from the quarks within the protons and neutrons in the nucleus of atoms to the leading edge of the Universe and the beginning of time at a distance of 13.7 billion light years. The recent concepts of Dark Matter and Dark Energy will also be presented.

After working for over 50 years in the aerospace and automotive industries, Adrian Popa retired from HRL Laboratories LLC (formerly GM Hughes Research Laboratories) in Malibu, CA in August 2000 where he was the Director of Programs in the President's Office. Since retiring he has been consulting for Boeing and has been working with 5th grade math students at the Conejo School and also at the Braille Institute in Santa Barbara where he has developed sensors to aid blind science students. Adrian also has answered over 400 physics and engineering related questions submitted by students and teachers to the Washington University Medical School's, award winning MAD SCIENCE website <http://www.madsci.org>.

As always, the CVARC club meeting is held on the third Thursday of the month at the East County Sheriff Station located at:

2101 East Olsen Road
Thousand Oaks, CA 91360

The East County Sheriff Station facility is just off of the 23 freeway between Thousand Oaks and Simi Valley. We look forward to seeing you there.

Conejo Valley Amateur Radio Club 2009 Event Calendar

May 9	Cruisin' the Conejo Bike Ride
May 16	Sea-to-Summit Bike Ride
May 14 - 16	Dayton Hamvention
May 21	CVARC Club Meeting
May 30	TRW Swap Meet
June 1	2 nd Technician License Class Ends
June 14	FCC License Exam
June 16	3 rd Technician License Class Begins
June 18	CVARC Club Meeting
June 27 - 28	Field Day
June 27	TRW Swap Meet
July 3	Moorpark Fireworks
July 16	CVARC Club Meeting
July 25	TRW Swap Meet
August 4	3 rd Technician Class Ends
August 9	FCC License Exam
August 18	4 th Technician License Class Begins
August 12	SB Section Hamfest, Santa Barbara
August 20	CVARC Club Meeting
August __ (tentative)	CVARC Summer Picnic
August 29	TRW Swap Meet
September 17	CVARC Club Meeting
September 26	TRW Swap Meet
No Official Date (Yet)	ARRL SW Division Convention
October 6	Technician License Class Complete
October 11	FCC License Exam
October 15	CVARC Club Meeting
October 16 - 18	Boy Scouts Jamboree on the Air (JOTA)
October 20	5 th Technician License Class Begins
October 31	TRW Swap Meet
November 14	Malibu Endurance Ride
November 19	CVARC Club Meeting
November 28	TRW Swap Meet
December 5 (tentative)	CVARC Holiday Party
December 8	Fifth Technician Class Completes
December 13	FCC License Exam
December 26	TRW Swap Meet

Please submit suggestions for additional dates to af6cd@arrl.net

Bringing Items to the Club Meeting

Several members have brought items “free for the taking” such as cables, power bricks, etc. and dropped them off at the back of the room. We encourage providing other hams the chance to

pick the items up free, but if you do this, *you must stay with the items till the end of the meeting*, and must take home anything left. WE CANNOT leave rubbish (particularly electronic items that might be viewed as hazardous waste) in the room (even in the trash cans).

Dinner with the Club Speaker Sue Hanson, N6OIZ

Pizza anyone??? Unfortunately, Adrian Popa could not join us for dinner before the presentation, but we are trying to get last month's speaker (Paul Rabb) to come. Eric (WB6PYK) has suggested that we dine at Toppers pizza this month. An excellent suggestion! If you have never been there, Toppers has an awesome salad bar, pizza, and sandwiches.

They however don't have a web site. If you would like to contact them the phone number is (805) 495-4444. Toppers has several locations, and we will be meeting at the one at 1416 North Moorpark road. This is in the Ralphs shopping plaza. The 5:30 time seems to work, so that we can enjoy dinner and still make it to the meeting on time.

Come on down and enjoy dinner before the meeting.

Electronics Expeditors

We have a “new” electronics component supplier available in the area. Electronics Expeditors is located at 700 Via Pescador, off of Flynn Road, northeast of Harbor Freight. Retail hours are Monday through Friday 9:00am to 4:30pm. Phone: 805-987-7171 <http://www.expeditors.com>

Please stop by and tell them you saw this note in the newsletter.

June Club Speaker Phil Bartlett, K6UJO

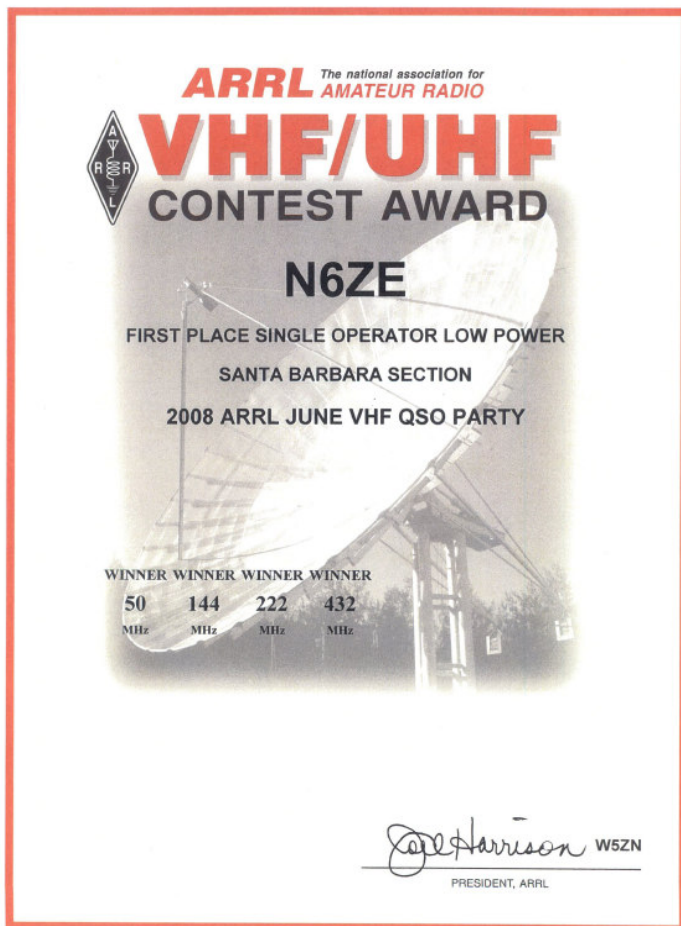
Our very own Rob Hanson and the field day committee members will be presenting on field day.

ARRL June VHF QSO Party Neil Waybright, AF6CD

For the testers in our midst the goal is to have a good weekend, and perhaps you will be the best this time out. This happened for our very own Pete Heins N6ZE who won the 2008 Santa Barbara Section top prize in the Single Operator, Low Power class (<100W) with the following stats:

Band	# QSOs	# Grids
6 m	121	55
2 m	54	8
135 cm	11	4
70 cm	18	4

Total Score: 16,543 points



Did you miss the DX convention? Jonathan Fox, KT6LA

Every year in mid April there is the International DX Convention held in Visalia, CA. Visalia is about a 3 hr drive from our area and this year's convention was April 17-19. Even if you are presently not involved in DXing it's worth checking out. Vendors from the major radio manufacturers

are there such as Icom, Yaesu, Elecraft, and Flex Radio, along with Alpha, Heil, Force 12, Stepp-IR, US Tower and the DX store to name a few. It's a great time to talk to the manufacturer reps and try out some of the gear.

This year, for the first time at the convention, the Northern California Contest Club sponsored a 4-hour Contesting seminar on Friday called the "Contest Academy". Inspired by a strong growing interest in Contesting at the International DX Convention, NCCC provided a valuable learning experience for attendees. The primary goal was to cover the basics of Contesting, drawing from NCCC's 38-year history as a recognized participant and leader in amateur radio Contesting. Main topics were - Contesting As a Radiosport, Contest Logging Software, Contest Station Layout & Design and RTTY Contesting.

On Saturday, there were various technical seminars, forums on DXing and contesting plus presentations by many of the year's major DXpedition teams. Here is a sampling: **The Physiology Of Human Hearing** - A special presentation by Bob Heil and Chip Margelli, **Contest Forum** Moderated by Ward Silver N0AX, editor of the Contester's Rate Sheet and a contributing Editor to QST Magazine, **Contest Antennas — Domestic or DX, What's Your Pleasure?** Dean Straw, N6BV, and **Interfacing Computers to Radios simply, inexpensively, and reliably** Jim Brown, K9YC.

Saturday night's banquet is the highlight of the program. The special guest speaker, grand raffle and awards take place after dinner. From CVARC, **Jonathan Fox, KT6LA** won the Clipperton award. The Clipperton Award plaque is given annually at the International DX Convention in recognition of outstanding achievement as the Southern CA DX Club - *Rookie of the Year*. To qualify you have to have made the most contacts of any new member of the SCDXC during your first year - Jonathan had 118 confirmed country contacts.

One of the many reasons hams come to Visalia every year is to participate in the incredible raffle. For the 60th anniversary they went all out to make this year's raffle one of the very best ever.

HRO, Icom, Kenwood, Yaesu and other vendors and manufacturer's made it possible to offer an array of major prizes that you are unlikely to see at other amateur radio events. In total, the prizes were estimated to be worth \$35,000 and included an ICOM 7700, IC-7000 and Yaesu FT-2000 transceivers.

The keynote speaker for the Saturday night banquet was the **Hon. John Scott Redd (K0DQ)**, Vice Admiral, U.S. Navy retired. He was recently awarded the National Security Medal by President Bush, in recognition of "his more than 40 years of exceptional service to the Nation, strengthening its intelligence capabilities and improving national security." From 2005 to 2007, Vice Admiral Redd served as the first Senate-confirmed Director of the National Counter Terrorism Center (NCTC), reporting to the President and responsible for integrating all instruments of U.S. national power into the Nation's first war plan for the global war on terror. Vice Admiral Redd spoke on his life lived on the tip of a spear, from his unique perspective as a DXer and con- tester.

The convention concludes after the Sunday morning breakfast. After another round of raffle prize giveaways, the guest speaker was **Bob Allphin - K4UEE**. Bob has visited 96 DXCC entities and operated from 52. He has participated in dozens of DXpeditions and in the last 12 years, his operations has over 600,000 QSOs. At the breakfast, he spoke on his recent DXpedition Desecheo, K5D which was a new one for many of us. It's always interesting to see what goes into one of these expeditions. It's rare that one of them goes as planned and Bob showed pictures of each step of the way.

If any of this sounds interesting, check out the website and start to make plans for next year, April 16, 17 & 18th. <http://dxconvention.org/> See you there!

Triple, Dual or Single Conversion – What's the Difference for the Modern HF Transceiver?

To follow up on the excellent presentation given by Paul Raab at the last CVARC meeting, I thought I'd review what I understand to be the principal alternatives in the current crop of HF transceivers. Since Elecraft and ICOM push hard on the benefits of their roofing filters and DSP, I thought I'd focus on that aspect. What you've already heard about filters has a direct bearing on the discussion, as well as the string of functional blocks that take the RF from your coax and translate it to a signal you can hear. In between, we worry about selectivity (picking out the SSB, CW, RTTY or PSK signal we want to hear and not the QRM), sensitivity (getting the weak ones during these poor conditions on the HF bands), and blocking (countering very strong signals outside our bandwidth that can decrease the effective sensitivity and create spurious signals that wouldn't be there in a perfect world).

Take a look at the block diagram of critical elements in the receive chain. There is a Preamp to boost the receive input from the antenna (after the T/R switch). In most situations, this is by-passed since the background noise that your antenna hears overpowers the internal noise of the receiver. The exception is when you move above 20 meters and/or the band is so quiet that your receiver noise actually dominates. Every receiver must use a mixer to transfer the RF frequency you're receiving to a standard Intermediate Frequency (IF) set by filters and other devices to be discussed. This diagram presumes three separate mixers and IF stages, common in older designs including the ICOM IC 756 PRO I, II and III. The 1st LO is a variable frequency oscillator (VFO) that is controlled by the tuning knob or touch pad. Its frequency must be stable and hence the use of phase lock loops connected to a frequency synthesizer, collectively called a Direct Digital Synthesizer (DDS). The mixer either adds or subtracts the Local Oscillator (LO) frequency from the RF frequency to place the signal in the center of the IF. There are lots of twists and turns we won't go into here due to limited space. But one important one is the feature called IF Shift, where the 2nd and 3rd LOs are moved together to cause the signal to slide up or down with the IF. This allows you to put an interfering signal outside the IF bandwidth. Much of the manipulation of the final IF to recover the

content of the modulation is accomplished with the Digital Signal Processor (DSP), discussed later.

The background stuff being out of the way, let's take a look at the comparative table below the block diagram. I've listed five current popular HF rigs and addressed the structure of their receivers. This is at a pretty high level and there are many other aspects, but I think these tend to drive the technical capability of the radio from a receiving perspective. We see that ICOM has standardized on a 1st IF of 64.455 MHz, which is above the highest frequency of the 6 meter band. This approach would help with the construction of a true general coverage receiver for 500 kHz to 56 MHz. We, of course, are mainly interested in the ham bands, but ICOM decided to provide the full range. In the 756 PRO series, there are three IFs with only a very broad IF filter in the 1st IF. That particular filter has been referred to as the Roofing Filter, because it sets the maximum bandwidth that the downstream components will see. A wide filter here, like in the PRO series, tends to increase the undesirable loading from out of band signals you won't hear but are nevertheless present on either side of the desired signal. We also see that the 3rd IF is 455 kHz, a standard that has been with us as long as many of us have been alive. Perhaps it will see its final days before we do!

ICOM brought out the 7800 with a new architecture consisting of just two IFs and the ability to select from three different Roofing Filters – 3, 6 and 15 kHz. If you operate SSB, CW, RTTY and PSK, then the 3 kHz filter is going to work the best for you. Out here on the West Coast, QRM tends to be pretty easy on us. But, back East and in Europe, there are more stations with strong signals that would push your receiver a lot harder. Bands get particularly crowded during the biggest contests, like Sweepstakes, CQ WPX, ARRL DX, and especially Field Day. This is when the roofing filter earns its keep. It won't protect you from stations inside your own tent, so to speak. You might wonder what the 6 kHz and 15 kHz Roofing Filters are for. Those applications include Ancient Modulation (AM), Frequency Modulation (FM) and perhaps Slow Scan TV. For

me, 3 kHz is fine for everything I do on the HF bands.

Before moving on to the wonderful new K3, let me cover the DSP that is the last box in the diagram. This device replaces the last stage of filtering and also detects the modulation on the signal – producing the audio you hear (CW and SSB) or tones you deliver to a TNC for digital modes. The ICOMs all have IF DSP that operates on the 3rd IF frequency of 36 kHz. There's more than I can possibly discuss here, but suffice it to say that the IF DSP is the best way to go since it allows the receiver to manage the signal (AGC and frequency manipulation) as well as demodulate the audio from it. DSP also provides frequency notching for tone type QRM (that's communication for us CW ops) and noise reduction. Much of this can be done with Audio Frequency (AF) DSP, but the range of capability is limited by the fact that the signal has already been manipulated by the various analog components that precede it. The bottom line is that the ICOM radios have very good IF DSP, but only the 7600, 7700 and 7800 have the better roofing filters and one less IF to introduce noise and distortion.

The K3 is arguably the best performing HF transceiver on the ham market. Elecraft has designed a radio that does nearly everything right, and their customers all rave about the performance of the receiver. It is somewhat like the 7800 in that there are two IFs and the availability of multiple Roofing Filter bandwidths. What's attractive to CW operators is that they have very narrow roofing filters: 250 and 450 Hz. This is in addition to the IF filtering capability of their DSP, which can take the received bandwidth down to as little as 50 Hz! That will narrow your ear to just one signal under almost any condition (except for QRM that is zero beat). They could do this because the 8.251 MHz IF is low enough to allow such narrow filters to be provided for this class of radio. The DSP approach is like that of ICOM and I've found them all to work very well from that standpoint.

I've included the TS-480 for reference, although it's not in the same class of the above transceivers. Don't get me wrong – the 480 is a fine piece of gear and well worth the money. But, it just

can't compare in terms of its receiver for the most difficult conditions that the others were designed to address. Kenwood calls their 2nd IF filter a Roofing Filter, but it doesn't match what the 7600/7700/7800 and K3 can accomplish with their Roofing Filters in the first IF. Note also that the DSP of the 480 operates only on AF frequencies and its less powerful as well.

Now, the last entry is something totally different in terms of design: the Flex 5000. As you probably know, this radio is a black box with no controls other than an on/off switch! All of the important stuff and the user interface are provided by a PC running Microsoft Windows XP or Vista. The box interfaces with the PC using very high-speed FireWire. You'll probably need a Core Duo machine to give the best performance. The box is pretty simple inside, especially from a receiver standpoint. It has but one LO and mixer, and the first and only IF is at 30 kHz. Nothing else is done inside that black box. The DSP of the PC does all of the filtering, demodulation, noise reduction, and control. The box costs around \$2,500 and the software is free! I can't go into the deal here, but you can learn lots from their website: www.flex-radio.com.

Which radio is best? Well, they're all great and it depends on what you want to do with it and how

much you have to spend. If you want to concentrate on operating and not the interesting internals of the rig, I like the ICOM radios. They have several options in the range of \$1,300 for the IC 7000 (a PRO 3 in a small package) up to the mammoth 7800 at the price of a motorcycle. These radios are great under almost any condition and their signals are amazingly clean. They are also very easy to operate and are very well made. The same can probably be said about the Kenwood TS 480, although I think it's a bit lacking for a main base station rig.

OK, the K3 is outstanding. It will do almost anything you want, and you can install those options you want. This allows you to get in for the same money as the IC 7000, but all the bells and whistles (Roofing Filters, 100 watt output, recorder and second receiver) can run it up to \$4,000! I've heard it said that the radio is pretty rugged, but it doesn't have the solid feel of the Japanese rigs.

Be sure of what you want to do before committing funds, but you really can't go wrong after you've made your choice. Let me know if you have any questions or comments.

Bruce Elbert, K6ZB

Name: _____
Call Sign: _____
Class: _____
Address: _____
City, ST Zip _____
Tel: (____) _____ - _____
E-Mail: _____
ARRL Member expiration date (on QST label) _____

ACS # _____ ARES# _____
Date: _____ Update Roster Only? _____
Family Membership: Names/Calls _____

Send Information/Application to:
Conejo Valley Amateur Radio Club
P.O. Box 2093
Thousand Oaks, CA 91358-2093

New Renewal
Single Membership - \$25 _____
Multi-year ____ years @ \$20 = _____
New Ham, New Member - \$10 _____
Single Membership, Full-Time Student \$10 _____
Family Membership - \$30 _____
ARRL Membership Renewal (include ARRL form) \$ _____
AD Space (2x3) One Year (member) - \$35 _____
AD Space (2x3) One Year (non-Member) - \$75 _____
Total Enclosed \$ _____
Cash Check Number _____

Interested in License Upgrades? _____
Joining ARES/ACS? _____
Disaster Action Team? _____
Obtain a HAM License? _____

Ventura County ACS/ARES Times & Frequencies

Area 2 ACS/ARES members are encouraged to check in every Tuesday night at 7:00pm on the Area 2 check-in nets.



Area	Time	Mode	Frequency	Shift	PL	Repeater/Notes
Area 1	7:00-7:30 pm	Voice	147.930	-	127.3	AD6SV
<u>Area 2</u>	<u>7:00-7:30 pm</u>	<u>Voice</u>	<u>146.850</u>	-	<u>94.8</u>	<u>K6AER/Grissom</u>
<u>Area 2</u>	<u>7:10-7:30 pm</u>	<u>Voice</u>	<u>224.700</u>	-	<u>156.7</u>	<u>K6HB</u>
<u>Area 2</u>	<u>7:10-7:30 pm</u>	<u>Voice</u>	<u>449.440</u>	-	<u>131.8</u>	<u>W6AMG/Amgen</u>
Area 2	(Simplex)	Voice	146.445	None	None	Simplex
Area 2	(Backup Repeater)	Voice	147.885	-	127.3	N6JMI "Bozo"
Area 3	7:15-7:30 pm	Voice	147.915	-	127.3	WB6ZTQ
Area 4	7:15-7:30 pm	Voice	146.970	-	127.3	WB6YQN
Area 5	7:00-7:30 pm	Voice	145.400	-	None	N6FL
Area 6/7	7:00-7:30 pm	Voice	147.975	-	127.3	N6VUY
Area 8	7:00-7:30 pm	Voice	146.985	-	127.3	South Mtn.
County	7:30-8:00 pm	Voice	146.880	-	127.3	WA6ZTT
County	6:45-7:00 pm	Voice	52.980	-	82.5	K6SMR
County	7:30-8:00 pm	Voice	224.020	-	127.3	WB6ZTR
County	Before 6:30 pm	Packet	145.650	None	None	Hospital Net
County	(ACS Simplex)	Voice	147.570	None	None	Simplex

Net Control operations for the weekly ACS/ARES Area 2 check-in are run from the ACS/ARES communications center at East County Sheriff Station (on Olsen Road) every Tuesday starting at 7:00pm.

Visitors are welcome and have the opportunity to operate the station. Please contact Gino Spinelli, KI6DJV at (805) 529-6101 if you would like to attend.

For questions concerning ACS/ARES, please call the Area 2 Emergency Coordinator, Ken Larson, KJ6RZ at (805) 495-9435 or go to the ACS/ARES section of the CVARC website at <http://www.cvarc.org>.

ACS members should remember that their ACS card is issued for only two years. When your card is due to expire, please call Jerry B. Goldman KC6JSO (805) 405-8213 or (805) 493-0076 Office. Jerry works with OES on a regular basis and will track your renewal to ensure that you receive your new badge in the shortest possible time. You will need to complete a Volunteer Update form for your renewal. Jerry will email this form to you 45 days prior to your ACS card expiration date. Please make sure that Jerry has your correct email address at all times.

2008 CVARC Officers

President.....	Greg Lane	K7SDW	(805) 498-0454	k7sdw@verizon.net
Vice President.....	Phil Bartlett.....	K6UJO.....	(805) 499-6935	peb@peb.net
Secretary	Mary Ho.....	KI6COG.....	(805) 494-9241	abele7213@mypacks.net
Treasurer	Dave Morton.....	AA6DM	(805) 495-3920	aa6dm@arrl.net
Public Relations	Brad Ormsby	WA6GLE	(818) 991-1130	bormsby@sbcglobal.net
Technical	Bruce Elbert.....	K6ZB	(805) 529-2541	k6zb@arrl.net
Operations	Rob Hanson	W6RH	(805) 376-9350	w6rh@verizon.net
Newsletter Editor	Neil Waybright.....	AF6CD.....	(805) 517-2962	af6cd@arrl.net
Education.....	Karl Moody	AE6TO	(805) 523-0622	ke6wvz@aol.com
Social.....	Sue Hanson.....	N6IOZ	(805) 376-9350	robhanson@juno.com
Member at Large	Hugh Bosma.....	AE6YC	(805) 498-1987	hrbcrb@aol.com
Member at Large	Mike D'Amore.....	N6MDA	(805) 496-1073	mike.damore@roadrunner.com



CVARC is recognized by the ARRL as a Special Service Club (SSC). To be a part of the ARRL's Special Service Club program, the club must regularly show that it is actively involved in certain areas, including:

- New Ham Development and Training
- Public Relations
- Emergency Communications
- Technical Advancement
- Operating Activities



Conejo Valley Amateur Radio Club
PO Box 2093
Thousand Oaks, CA 91358-2093

Address Correction Requested

– FIRST – CLASS – MAIL –



CVARC Online

For up-to-date information and back issues of newsletters, please visit the CVARC Web Site at <http://www.cvarc.org>. In addition to visiting the Web site, you may like to join the CVARC Yahoo Group at <http://groups.yahoo.com/group/CVARCDiscussion/>

The Conejo Valley Amateur Radio Club is an ARRL affiliated Special Service Club. Meetings are held on the third Thursday of every month, except December. The meeting location is the Community Room at The East County Sheriff Station, 2101 E Olsen Road, Thousand Oaks. Meetings start at 7:30pm with a pre-meeting social and technical assistance session from 6:30 to 7:30pm. Meetings are open to the public, and members are encouraged to bring their friends.

“News from CVARC” is published monthly (on the Monday preceding the CVARC club meeting) by the Conejo Valley Amateur Radio Club, AA6CV PO Box 2093, Thousand Oaks, CA 91358-2093. It is mailed free of charge to all members.

Opinions expressed in articles in this newsletter are those of the authors and do not necessarily represent the views of the club, its Board, or its members.

CVARC Membership Rates

Visitors are always welcome at our monthly meetings, and we do not pressure newcomers to join. If, however, you would like to support the club and its activities by becoming a member then we will be very pleased.

The simplest way to join (or to renew) is to write us a check bearing your address, and give or send it to our Treasurer. Make the check payable to “CVARC” and please put your call sign and/or email address, if you have one, on the memo line of your check. Name, Call sign, or Address changes may be emailed to the Treasurer.

Current annual rates are: Regular Membership: \$25. Family Membership: \$30. Special discounts are available for; New members just licensed: \$10. Full-time Students: \$10. Regular members renewing for multiple years: \$20/year.